

ing fuscous. Pronotum: length .47 mm., width at base 1.06 mm.

♀. Length 2.8 mm., width 1.2 mm. Head: width .71 mm., vertex .37 mm. Antennae: segment I, length .16 mm.; II, .75 mm.; III, .41 mm.; IV, .29 mm. Pronotum: length .445 mm., width at base 1.03 mm. Very similar to the male in coloration and pubescence.

Holotype: ♂ June 20, 1928, Chirichaua Mts., ARIZONA (A. A. Nichol); author's collection. *Allotype*: same data as the type. *Paratypes*: 18 ♂ ♀, taken with the types on mistletoe (*Phoradendron macrophyllum*) where the species was breeding.

Two New Heteroptera from Southern California (Cydnidae, Nabidae).

By W. S. BLATCHLEY, Indianapolis, Indiana.

Among the 100 and more species of Heteroptera taken by the writer in the vicinity of Los Angeles, California, between November 25, 1927, and March 15, 1928, were four which are apparently new to science. Two of these, belonging to the family Lygaeidae, will soon be described by Prof. H. G. Barber. The other two are described in the present paper. The types of both are in the writer's collection.

Pangaeus californicus, n. sp.

Broadly oval, subdepressed. Dark chestnut-brown to piceous-black; membrane whitish-hyaline; tarsi and joints 4 and 5 of antennae pale reddish-brown. Head declivent, as broad across eyes as front margin of pronotum, without an anteapical spine-beset groove; cheeks each with four or five erect bristles and two broad sub-transverse ridges, the intervals between the ridges very finely indistinctly punctate; vertex almost smooth. Beak reaching middle coxae. Antennae reaching basal third of pronotum; joint 1 cylindrical; 2 more slender, subclavate, one-fourth longer than 3, the latter stouter, also subclavate; 4 and 5 still stouter, subfusiform, densely clothed with fine very short yellowish pubescence, 4 slightly the longer. Pronotum with the usual subapical transverse impression of the genus very feeble and without visible punctures at middle; submedian transverse impression also ill defined and with a single irregular row of fine punctures; disk of pronotum otherwise almost smooth, the front lobe the more convex; front

angles broadly rounded, hind angles subrectangular, side margins each with 9 or 10 erect, evenly spaced bristles. Scutellum a nearly equilateral triangle, its sides strongly converging from base to the narrowly rounded apex; disk with basal third smooth, feebly elevated, apical two-thirds coarsely, sparsely irregularly punctate. Elytra with membrane slightly surpassing tip of abdomen; costal margins of basal half each with three bristle-bearing punctures; outer margin of clavus with a single regular row of coarse punctures, these obsolete toward apex; corium with a single row of finer punctures along inner margin and a few irregular ones on basal third, otherwise wholly smooth. Under surface dark chestnut-brown, smooth, strongly shining. Length, 9.3-10 mm.; width, 4.8-5 mm.

Type a female taken January 10, 1928, from beneath a stone in a small semi-desert area near Sunland, Los Angeles County, CALIFORNIA. Other unnamed specimens are in the Museum of the California Academy of Sciences labelled "San Diego, Cal., IV-8 and Coldwater Canyon, Los Angeles Co., Cal., X-4." This species is most closely allied to *P. discrepans* Uhl., from which it differs in its larger size, lack of punctures or distinct groove behind apex of pronotum, much fewer and more regularly placed bristles on cheeks and along side margins of pronotum and elytra, smoother disks of pronotum and corium, etc. The length of *discrepans* is 6.5-8 mm.; there are on head about 10 erect bristles on each cheek, 18 or 20 similar bristles along each side margin of pronotum and 7 to 9 on each costal margin of elytra; the corium there has two rows of punctures along inner margin and numerous much smaller punctures scattered irregularly over the entire surface.

P. discrepans, and especially *californicus*, differ from *P. bilineatus* (Say), our most widely distributed and best known species, in the vagueness or absence of the anteapical groove of pronotum, and the generic keys at present extant in North American literature in which the presence of this groove is the primary character used, will either have to be modified or a new genus erected for these two species.

Nabis edax n. sp.

Elongate, slender. Color a nearly uniform bright straw-yellow, moderately shining; a stripe on sides of head behind the eyes, collar and a very narrow median stripe on pronotum,

median stripe slightly widened posteriorly on scutellum, extreme tip of commissure, and a stripe on the side of mesosternum, purplish-black; membrane slightly dusky, a very small fuscous spot on the margins each side of middle; outer face of hind femora with a row of minute fuscous dots; tarsal claws piceous. Antennae very slender, minutely bristly-pubescent, joint 1 as long as head, 2 twice as long as 1, one-fifth longer than 3, its tip fuscous; 4 two-fifths the length of 3. Pronotum subcampanulate, the postapical and submedian constrictions broad but prominent, surface smooth. Elytra with sides parallel to apical fourth, thence curved into the broadly rounded tips; commissure and apex of corium subequal in length, the latter straight, diagonal, longer than scutellum; disk of elytra minutely, indistinctly rather sparsely pubescent. Connexivum narrowly exposed, the incisures between the segments each with a very small fuscous spot. Membranes slightly surpassing tip of abdomen. Femora unarmed beneath; hind ones very slender, one-half longer than middle pair. Abdomen thickly, very finely pubescent. Genital segment of male scoop-shaped and with a broad median lengthwise groove. Length, 6.5 mm.; width, 2 mm.

Type a male, taken December 6, 1927, by sifting debris beneath a pile of matted grass in Hancock Park, Los Angeles, CALIFORNIA. Differs from all our other described species in its nearly uniform pale color, relative length of the very slender antennal segments, etc.

North American Predacious Insects Attacking Japanese Beetle Grubs (*Popillia japonica* Newman).

(Coleop.: Scarabaeidae, Carabidae; Dipt.: Tabanidae, Therevidae, Asilidae).*

By HAROLD C. HALLOCK, Associate Entomologist, U. S. Dept. of Agri., Bureau of Entomology.

There has been considerable doubt as to whether North American insects were helping to reduce the numbers of the Japanese beetle in this country. In order that this question might be answered, at least in part, extensive surveys were made during the seasons of 1923 to 1925, inclusive. The work

*Contribution No. 49, Japanese Beetle Research Laboratory, Moorestown, New Jersey.